FLOOD EMERGENCY REPORT

FEB. 13 THROUGH FEB. 22, 1980

Santa Clara Valley Water District

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SANTA CLARA VALLEY WATER DISTRICT

FLOOD EMERGENCY OPERATIONS
FEBRUARY 13, 1980 - FEBRUARY 22, 1980

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April 1980

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PURPOSE

During the period of February 13, 1980 through February 22, 1980, Santa Clara Valley experienced heavy rainfall and runoff. Six of the County's major reservoirs spilled during the period. Significant runoff below local dams and runoff from watersheds without dams caused heavy damage. Present estimate to repair damages to District facilities is about $1,554,500. In some cases this repair work has already been completed. In addition, private property in many areas both off and on streams was damaged.

This report serves to document the hydrologic information, flooding and erosion damage for possible reimbursement through State and Federal sources. Further, the report will serve as a historic document for planning purposes.

SUMMARY

Rainfall

During the period of February 13, 1980 through February 22, 1980, a series of storms entered Santa Clara County causing significant rainfall to occur. Table 1 summarizes the daily outfall experienced throughout the County during this storm period as measured by District measurement stations. Rainfall varied from 139 mm to 610 mm as recorded at these key locations.

Runoff

Local reservoir storage prior to the storm was at about 51% of capacity, a large volume of runoff was captured in the reservoirs and prevented from combining with the large downstream urban runoffs. Had local reservoirs been full at the start of this storm period, larger flows and resultant flooding could have been experienced. Table 2 on page 7 of this report summarizes the peak flows as recorded at select District streamflow measurement stations located throughout the County. Table 2 also relates a few of the peak flow events to a return frequency. The return frequencies vary from a low of about three years to a high of about twenty years. Table 4 on page 9 summarizes reservoir storage prior to and after the storm.

Flood Damage

The District activated the Emergency Operations Center at 5:00 a.m. on Monday, February 18, 1980. For the duration of the storm, District activity consisted of emergency repairs of District facilities and flood damage reduction efforts in areas throughout the County where the hazard was greatest. Documentation of particularly troublesome areas consisted of photographs, high flow staking and flow data gathering to assist engineers in future designs of remedies to these problems. Sandbags were made available to members of the community since District staff could not handle all the problems occurring throughout the County.

The estimated cost to repair damages which resulted from storms to District facilities is about $1,554,500. Most of the damage resulted from high flows which caused serious erosion in the creeks. A summary of the damages is contained in the Appendix. The following is a list of these facilities and estimated costs to repair. In some cases this repair work has already been completed.

Northwest Zone		
San Francisquito Creek		$ 222,000
Adobe Creek		25,000
	Total	$ 247,000
North Central Zone		
Sunnyvale East		70,000
Calabazas Creek		326,000
Saratoga Creek		171,000
San Tomas Creek		545,000
Wildcat Creek		3,000
	Total	$ 1,115,000
Central Zone		
Ross Creek		15,000
Guadalupe River		70,000
Greystone Creek		25,000
	Total	$ 110,000
East Zone		
Berryessa Creek		21,000
Sierra Creek		7,000
North Babb Creek		7,000
	Total	$ 35,000
South Zone		
Llagas Creek		10,000
Miscellaneous		
	Total	$ 10,000
Raw Water Transmission and Distribution		
Coyote-Alamitos Canal		5,000
Coyote, Coyote Canal Extension and Evergreen Canal		32,500
	Total	$ 47,500
	Total	$ 1,554,500

HYDROLOGIC DATA

Rainfall

The storm period began at about 1:00 p.m. on February 13, 1980 and ended at about 3:30 p.m. on February 22, 1980. A series of storms passed through this area during this period.

Table 3 is a summary of the rainfall frequency data at the representative stations for the 24-hour period and the 3-day period.

Runoff

The runoff yield from a storm is, in some respects, more crucial than the amount of rainfall. If watersheds are dry before a storm, runoff usually will be low. If watersheds are saturated, runoff resulting from rainfall will be high with a resulting high potential for flooding and increased flow into reservoirs.

Table 2 lists the peak flows experienced at various District streamflow measurement stations within Santa Clara County. Peak flow values and their respective return periods are preliminary. They are reported herein as a part of the flood information. These values should not be used for any flood analysis. Final values will be published after recorded data is evaluated.

Reservoir Operation

Reservoir operations during the storm were conducted in order that the maximum storm runoff could be stored for future use. On February 13, 1980 at 7:50 a.m., there was about 86,905 acre-feet of storage capacity available in the reservoirs.

Water was diverted from Almaden to Calero Reservoir for storage in Calero. An effort was made to divert runoff below the dam to the recharge facilities so that a minimum of water would be lost to the Bay.

TABLE 1

RAINFALL DATA
(Inches)
STORM OF FEBRUARY 13-22, 1980
(ALL VALUES ARE MIDNIGHT TO MIDNIGHT)
(UNIT OF MEASURE = MILLIMETRES)

STATIONS NAME	NO.	LOCATION (Basin)	2/13	2/14	2/15	2/16	2/17	2/18	2/19	2/20	2/21	2/22	TOTAL
Almaden	4	Alamitos Creek	5	20	36	81	48	38	61	41	10	3	343
Anderson	41	Coyote Creek	2	15	20	53	28	44	45	30	6	0	243
Dahl Ranch	24	Adobe Creek	3	20	41	81	36	51	53	31	15	8	339
Lexington Reservoir	42	Los Gatos Creek	6	32	62	121	87	107	118	59	15	3	610
Peabody	75	Llagas Creek	2	20	20	38	17	23	22	24	6	1	173
Penitencia Water Treatment Plant	99	U. Penitencia Creek	0	12	30	41	8	33	47	20	7	4	202
San Jose	86	Guadalupe River	3	8	19	29	8	23	34	13	1	1	139
Stevens Creek	100	Stevens Creek	3	23	43	74	43	71	58	38	8	3	364
U. T. C.	102	Silver Creek	3	13	28	48	18	51	41	25	13	0	240
Uvas Reservoir	104	Uvas Creek	5	18	15	53	41	23	46	31	8	0	240
Valley Christian	77	Saratoga Creek	3	31	61	104	58	79	58	53	13	3	463

25.4 mm = 1 Inch

TABLE 2
PRELIMINARY PEAK FLOW VALUES FOR VARIOUS
STREAMS IN SANTA CLARA COUNTY
DURING THE PERIOD FEB. 13-22, 1980

STA. NUMBER	LOCATION	FLOW 1/ CFS	RETURN 2/ PERIOD (YRS.)	1% DESIGN 3/ EVENT CFS
1	Penitencia @ Piedmont	888	5	
10	Fisher @ Monterey	737	3	3,700
18	Golf @ McAbee	254	3	
21	Ross @ Blossom Hill	714	20	1,200
51	Ross @ Cherry	1,549	20	2,000
23-B	Guadalupe @ Almaden	5,047	7	
25	Saratoga @ Pruneridge	2,297	10	3,500
26-A	Calabazas @ Wilcox	2,483	10	3,900
27	Smith @ Elam	329	7	1,000
29	San Tomas @ S.P.R.R.	660	3	3,200
31	Calabazas @ Rainbow	1,143	10	2,200
32-A	Permanente @ Berry	725	3	2,700
43	Guadalupe @ Hicks	1,012	5	
50	Los Gatos @ Lincoln	1,686	7	
56	Los Animas @ O'Connell	2,715	10	
57	Packwood @ Jackson Ranch	915	5	
59	Los Gatos @ Lark	1,591	10	6,900
67	Los Gatos below Lexington Res.	1,237	7	
69	Llagas below Chesbro Res.	1,610	20	
70	Alamitos @ Greystone	2,565	10	

1/ Flow rate values and their respective frequencies are estimated. They are reported herein as a part of flood emergency measures. These values should not be used for any flood analysis. Final values will be published after recorded data is evaluated.

2/ Design values are based on ultimate watershed conditions, which include urbanization of urban service areas, and no overbanking conditions.

3/ These values are approximate. They are based on frequency regimes for ultimate conditions.

TABLE 3

RAINFALL INTENSITIES

AND RETURN PERIODS

Precipitation Station Name	No.	M.M. 24-Hour Maximum	Approx. Return Period (Yrs)	M.M. 3-Day Maximum	Approx. Return Period (Yrs)
Almaden	4	81	2	168	4
Anderson	41	53	2	119	4
Dahl Ranch	24	81	2	168	4
Lexington	42	121	3	315	15
Penitencia Water Treatment Plant	99	47	2	100	7
Stevens Creek	100	74	2	188	6
United Tech	102	51	8	117	25

TABLE 4

RESERVOIR STORAGE

Before and After Storm Period

of February 13 through February 22, 1980

Reservoir	Maximum Storage at Spillway (Ac-Ft)	Beginning 0750, 2-13-80		Ending 0700, 2-22-80	
		Storage (Ac-Ft)	Percent Capacity	Storage (Ac-Ft)	Percent Capacity
Almaden	1,780	505	28	1,780 **	100
Anderson	91,280	31,909	35	70,441	77
Calero	10,050	5,363	53	8,689	86
Chesbro*	8,086	4,979	62	8,124 **	100
Coyote	23,670	19,648	83	25,284 **	107
Guadalupe	3,740	2,259	60	3,421	91
Lexington	20,210	10,020	50	20,552 **	102
Stevens Creek	3,600	1,026	29	2,248	62
Uvas*	9,950	9,906	100	10,222 **	103
Vasona	410	303	74	229	56
Pacheco*	6,135	6,088	99	6,294 **	103
TOTALS	178,911	92,006	51	157,284	88
District Reservoir Totals	154,740	71,033	46	132,644	86

* Reservoir not owned and operated by Santa Clara Valley Water District.

** Reservoir spilling.

The following reservoirs reached capacity and/or spilled:

Almaden Reservoir	2-19-80
Chesbro Reservoir	2-19-80
Coyote Reservoir*	2-17-80
Guadalupe Reservoir	2-19-80
Lexington Reservoir	2-20-80
Uvas Reservoir**	2-17-80
Vasona Reservoir	2-19-80
Pacheco Reservoir***	2-17-80

* Spilled first on January 18, 1980.

** Spilled first on January 16, 1980.

*** Spilled first on January 22, 1980.

Additional Information

Additional information is available that has not been included in this report. This includes hydrologic data, photographs, flood information, team reports, etc. Should this information need to be referenced, contact Mr. Richard Pardini at the District offices.

APPENDIX

SUMMARY OF FLOOD DAMAGES

SUMMARY OF FLOOD DAMAGES

CITY OF MORGAN HILL

Contact Person: Jim Giottonini 779-7251
Date: 2-27-80

A lot of "heavy" minor flooding.

Tributaries to most creeks could not move all the water away

quick enough -- overtopping.

Drainage problems - just couldn't drain.

Sewage problems with backup and manhole covers one foot off ground.

Ponding in streets - fields.

Llagas flooded

Watsonville Road 2-3 feet flow over road.

North - Right Avenue - Santa Teresa - Flooded Houses

Main Street - flooded

Dunne Avenue - mud

Pipes and storm drains over capacity

Streets lower than creek

Ponding

Via Loma Area

Fisher Creek Drainage Area

Hale - sandbag houses

South - Right/Hale - Flooded Houses

Inflow into sewer line

Sewer out and in streets

Main Avenue - Flooded

Monterey Road - Flooded

Right Avenue to Fourth Street - Flooded

Spring Avenue catch basin flooded and sedimentation on street

Bernal Avenue - creek filled - Flooded

South (Continued)

Hidden Creek Subdivision at

Edmundson Creek/Llagas - 2½' deep

School problems - ferrying kids

Encino - field ponding

Black Prints Court - flooded houses

Santa Teresa/Sunshine - erosion

Ponding - Dunne Avenue/Highway 1 - Corralitos Creek

School problems - ferrying kids

FLOOD DAMAGE REPORTS

SOUTH SANTA CLARA VALLEY WATER DISTRICT

Contact Person: Jack Sturla
Date: 2/28/80

Uvas Creek at Pajaro River Overbank

Crop damage only (if planted).

Llagas Creek above Bloomfield

Where old channel enters new channel, water was 18" to 24" from overtopping bank - damage to channel only. (Erosion)

Uvas Creek Low Flow Bridge Crossing Washed Out

Approximately 1-2 miles below dam along Watsonville Road. (Old Creek Road)

Llagas Drainage near Maple Avenue

Reports of some houses flooded; carpet damage. Generally no major problems or damages.

TOWN OF LOS GATOS

Contact Person: Superintendent
Date: 2-28-80

Erosion problem at Hicks Road and Burke

No major damages reported.

CITY OF CUPERTINO

Contact Person: Public Works Department

Calabazas Creek at Miller Avenue

Restriction at Bridge, culvert too small. No damage; Common Problems.

CITY OF CAMPBELL

Contact Person: Bob Dias

Camden Avenue Under Construction

Local drainage problem; no damage; no flooding from flood control channels.

CITY OF LOS ALTOS

Contact Person: Ken Haukins

No serious problems; no damage; happens every year.

Adobe Creek overbank at University Terrace and Shoup Park.

A. Water did get near the Goodman Residence upstream of the Park.

B. Basement flooded at 1230 Payne Drive (local drainage).

CITY OF LOS ALTOS HILLS

Contact Person: John Carlson

Adobe creek overbank at Moody Road and Rhus Ridge Road above bridge

Trees in creek caused some problems. The City built a berm around channel with dozer to contain the water. They claim that the trees are still in the channel (about 6" in diameter). The berm they built would probably not withstand another major storm.

Adobe Creek

Trees in creek downstream of Foothill College.

Adobe Creek Lodge

Flooded, wooden channel overbank.

Very little, if any, property damage. This is a problem every wet year.

COUNTY OF SANTA CLARA

Contact Person: Transportation Agency

West Yard - Ken Stone - 299-3126

Calabazas at Central Expressway

No damage.

Stevens Creek reported overbank, mud in streets, no damage.

South Yard - Manuel (?) - 842-7136

Bloomfield and Fraser Lake Road

Jones Creek overbank; flooded farm land only.

East Yard - Allen Jones - 299-3446

Flooding at San Tomas Creek and San Tomas Expressway

Flooding at Almaden Expressway and Hillsdale

Both due to high water in channel; local drainage; could not drain into creeks. No damage.

Flooding of Ross Creek at various locations. - No damage.

Calabazas overbank flooding Lawrence Expressway - No damage.

Silver Creek overbank - No damage - No major problems reported.

CITY OF SAN JOSE

Contact Person: Stan Haugen - 277-4373
Date: 2-26-80

No major problems - regarding flooding.

Catch basins flooded - as per normal for heavy rains.

Traffic slow down - storm drains slow.

Penitencia - very heavy.

Coyote-Zanker Area overtopped - flap gate (our crews were there).

Alviso Flood Gates - silted shut.

Water backed up - almost to buildings.

Mud Flat (a building).

CITY OF SANTA CLARA

Contact Person: St. Superintendent - Mr. William T. Wersend 984-3151
Date: 2-26-80

Various flooding - minor - more inconvenience than real dollar damage; traffic slow down.

A. Lawrence and Pomeroy

Lawrence - down west side to Benton Street, down Wood Duck to North/East to Peacock Court, which is lower than the general area, and the water ponded. Several cars had water in them. The catch basin backed-up with debris - (4 hours) shovel time.

B. Pomeroy and Lawrence

Pomeroy bridge - back to Canada - a block west to Snively Court - minor ponding.

C. Saratoga Creek - OK

San Tomas - OK

D. Industrial Park Aldo/Nels

Guadalupe River - high; local flooding.

No traffic closed.

CITY OF SARATOGA

Contact Person: Bob Shook - 867-3438, Ext. 31
Date: 2-26-80

Various minor flooding - more inconvenience than real dollar damage.

A. Arroyo De Arguello

water runoff from hills too great for storm drain - one foot overtopping.

B. Bank Mill Road/Deep Well Court

water runoff too great for storm drains - erosion occurred moving solids that blocked and partly entered the storm drain. Erosion ($4,000 - $5,000) on hill, three homes were effected - one home 'wet' - they feel this particular home got wet because of the subterrain flow - not the land failure.

C. Broodwood Drive

Culvert overtopped due to collected debris.

There were homes damaged - no report yet.

D. Arroyo De Arguello

Small swale that leads to Calabazas Creek

Erosion to the toe slope

A home is near slope now - potential problem

CITY OF PALO ALTO

Contact Person: Mr. Schorenil

Nothing - just very minor problems they always get when it rains.

CITY OF SUNNYVALE

Contact Person: Jim Wade 738-5605

No flooding other than the normal backup in catch basins.

CITY OF MONTE SERENO

Contact Person: Mr. Olmstead

Very minimal slides; erosion on a few public roads; doubts if the dollar value would be more than $1,000 - $1,500.

CITY OF MILPITAS

Contact Person: Mr. Williams

Penitencia Creek came over at west side 50' south of Redwood Avenue; at west side 500' north of San Andreas. Berm was slightly low at these points. No dollar value given; nothing else to report.

CITY OF MOUNTAIN VIEW

Very minor flooding.

On night of 2/18, Stevens Creek overflows east of Moffett; west into a tree farm and stable (Mr. Crittenden). Horses were moved out - no damage as such. No dollar damage known.

Summary of Problems Noted By Storm Information Teams
and Through Telephone Complaints During 2/19/80 Storms

Flooding

Zone	Channel	Location Street(s)	Locaide Ref	Comments
NW	Adobe Creek	25640 Moody Road (Nr Pink Horse Ranch)	11	Water 12' from house and rising - Tree in channel
NC	Calabazas Creek	Miller Avenue	13-13'-12C	City of Cupertino request sand bags 200± - Dist Priority con for this site
NC	San Tomas Creek	Quito & Old Adobe Rd	25-14'-17A	Creek blocked & causing flooding
NC	Wildcat Creek	Montalvo Park	25-11'-18B 25-12'-17C	Creek is over bank and causing flooding at basement
C	Guadalupe River	Alma St (Elks)	19-20'-13B	Parking lot flooded River overbanked six inches deep ±
C	Guadalupe River	Julian & Pleasant	14-19'-11B	Water within 1.5' from top of bank
C	Ross Creek	a) Twin Oaks Drive Kennedy Road Downstream of Cherry Ave	26-16'-19C	a) Trash in road crossing at Twin Oaks causes flooding of area b) Water covering 3/4 along Montmorency Dr of the driveway lengths
C	Santa Teresa Creek	22621 San Vincente	34-25'-21C	Water is backing up in the street
E	Berryessa Creek	1915 Majestic Way	9-22'-6A	Creek behind Majestic Way School - Flooding
E	Coyote Creek	Downstream of Montague Expwy	8-17'-9A	Break in levee at one spot and water flowing over levee at another
E	Coyote Creek	1/4 mi N of Montague Expwy	8-18'-9D	Culvert blocked with debris and backing up creek 3' from overflow

Summary of Problems Noted By Storm Information Teams
and Through Telephone Complaints During 2/19/80 Storms

Flooding

Zone	Channel	Location Street(s)	Locaide Ref	Comments
E	Coyote Creek	1st Br Upstream of Trimble (Charcot?)	9-19'-7C	Is near flood stage - has power pole and trash build up on bridge
E	Coyote Creek	Charcot off Brokaw	9-19'-7C	East levee is washing out - 50± N of Charcot
E	Coyote Creek	Upstream of Coyote Lake along Gilroy-Hot Springs Road		Road flooded
E	Coyote Creek	Old Oakland Hwy at Gish Road	9-20'-8C	Intersection flooded L.C.F. said to check bridge x-ing for trash
E	L Penitencia Cr	Abbott Ave (Golf Course)	3-18'3D	Creek is flowing over bank
E.	Penitencia Creek	1st bridge E of King Road on Mabury	9-21'-8C	Creek out at bank 2'-3' of water in intersection
E	South Babb Creek	Morrie Drive	15-25'-9D	Culvert at the end of Morrie Dr is blocked with debris and is flooded 2'-3' over driveway
E	U Penitencia Creek	Private Bridge 400 ft downstream of Noble Avenue		
S	Edmundson Creek	460 W Edmundson Ave & Sunnyside Avenue	43-33'-28B	Creek behind house is over bank - flooding
S	Little Llagas Cr	Watsonville Rd and Monterey Road		Road flooded 2'± deep

Summary of Problems Noted By Storm Information Teams
and Through Telephone Complaints During 2/19/80 Storms

Erosion

Zone	Channel	Location Street(s)	Locaide Ref	Comments
NW	Adobe Creek	333 Blue Oak Lane	6-6'-7D	Retaining wall ready to fall into creek and could block channel
NW	Matadero Creek	996 Ilima (Bol Park)	6-5'-5D 6-5'-6B	Large oak tree has roots exposed
NW	San Francisquito	1365 Lincoln Avenue	1-5'-2A	Creek eroding (badly)
NW	San Francisquito	Marlow and Maple	1-5'-2A	Erosion on east bank
NW	San Francisquito	Between Chaucer and Marlow	1-5'-2A	Erosion Problem
NW	Stevens Creek	1721 Marshall Court	12-10'-12A	Large tree causing erosion in Grimes backyard
NC	Calabazas Creek	Homestead Avenue	13-13'-11B	Banks eroding
NC	Calabazas Creek	6620 Bolinger Road	17-12'-13B	Erosion getting close to property line
NC	Calabazas Creek	Lawrence Expressway		
NC	San Tomas Creek	Scott Avenue		Backfill behind wallundermined
NC	San Tomas Creek	Mission College Blvd		Bank erosion
NC	Saratoga Creek	Pruneridge to Forbes Avenues		Erosion
NC	Wildcat Creek	14010 Shadow Oaks Way	17-12'-16D	Creek eroding into backyard - lost fence
C	Golf Creek	Almaden Expressway	26-12'-19A	Banks eroding at santitary sewer installation
C	Golf Creek	Downstream of Camden Avenue		Erosion
C	Greystone Creek	Downstream of Camden Avenue		Erosion
C	Guadalupe River	Upstream of Hwy 101		S. E. levee erosion

E	Berryessa Creek	Cropley Ave to 680 Fwy	Continued erosion
E	N. Babb Creek	Upstream of Highwood Drive	Erosion

Summary of Problems Noted By Storm Information Teams
and Through Telephone Complaints During 2/19/80 Storms

Miscellaneous

Zone	Channel	Location Street(s)	Locaide Ref	Comments
NW	Permanente Creek Permanente Div.	At Diversion Street	12-8'-9B	All flow going down Diversion channel No flow down Permanente
NW	San Francisquito	Palo Alto Avenue at Marlow	1-5'-2A	Large tree in creek
NC	San Tomas Creek	Quito Road 500' v.s. of Old Adobe Road	25-14'-17A	Trash and debris - requested backhoe
NC	San Tomas Creek	Culvert at McCoy	18-15'-15C	Trash building up on center pier - could cause problems
C	Almendra Creek	310 Tait Avenue	25-14'-19B	Has water in basement and says if trash rack is cleaned; water would flow
C RW	Coyote Alamitos Canal	5460 Curie Court	27-24'-19A	Broken pipe flooding backyard
E RW	Coyote Canal	1/4 mile North of	35-30'-21A	Canal eroded - 50-75 long
E RW	Coyote Canal	Riverside Golf Course	35-30-21B	Canal is leaking because of squirrel holes - 10th and 11th fairways
E	Piedmont Creek	E of Piedmont Road and S of Uridas Ranch Road	4-21'-4B	Existing dam across creek - does not cause flooding, but will flood downstream if it fails
S	Uvas Creek	Old Coach Road	49-33'-32	Bridge washed out